



LAN-System 42 - The key to truly integrated communications

This document outlines what an IP-based communication system such as LAN-System 42 is, why it should be deployed and how it will help an organisation to more cost effectively achieve its goals.

Introduction

Users of Telephone, Intercom, Public Address, Radio, CCTV and Control Systems have come to expect a very high reliability of their systems and the thought of installing standard IT products to substitute for their separate systems, tends to be worrying. In fact, critical components are installed on servers which have a higher inherent reliability than PBXs, Intercom etc etc and which cannot easily be manipulated. In addition, the switches used on the Intranet / LAN have a very high reliability and in extremely critical applications can be installed in an error tolerant ring (or even double ring) structure. LAN terminals such as PCs can pose a problem if users are allowed to install software freely but LAN-System 42 Telephones, Radio, PA, CCTV Interfaces etc are very stable since they cannot be manipulated by users and only run the software the vendor intended.

Costs

It is clear that installing a LAN-System 42 entails a cost benefit, i.e. the customer will save money both during installation and usage. Although a LAN-System 42 needs a structured LAN, installing it instead of a Telephone + Intercom + PA + + gives obvious cost benefits. If the LAN-System 42 is incorporated into a structured network from the beginning, at least half of the necessary technology (adapters, cables, switches, etc) and thus at least half the work can be saved. This reduces the installation cost by at least 50%. By installing a tree structure, i.e. using a backbone to interconnect units / departments, costs can be cut even further.

The integration of voice, video & radio with data services also always incorporates the integration of the management of user specific data needed by functionality's that traditional equipment provide. When the user logs onto the network, it determines not only which resources of the network he may use but also the associated LAN terminal (phone, amplifier, video or PC) can be given his preferences, i.e. his identity, presence, etc irrespective of where he is physically located.

The greatest advantage of a LAN-System is the possibility to totally integrate voice, video etc with all computer applications and streamline the business processes in a corporation. LAN-System has the potential to reshape the communication landscape.

LAN SYSTEM 42 makes scenarios, with a surprising complexity, commercially feasible since it is based on the normal IT infrastructure. The integration of the communications system into the IT world makes it easy to access and mix resources. Management and administration of the system is also simplified since only one kind of expert is needed – an IT specialist. This of course lowers costs effectively.

Timing

If the idea of transporting voice via data lines has been around for some time, then why is it only coming up now? First of all the WWW has created demand for data, i.e. IP bandwidth that exceeds voice by a magnitude. But the internet protocol (IP) is a “best effort” means of transport, i.e. it cannot handle voice well per se. By prioritising voice, reserving bandwidth and dimensioning the components correctly this problem can be overcome. Ironically, many carriers are already doing just this. Another important development is the standardisation by the ITU and IETF of basic services and supplementary services (advanced PBX functionality) and the availability of the software as open source. In order to ensure that LAN SYSTEM 42 are deployed rapidly, it is essential that vendors and customers adhere to these open standards that guarantee interoperability. H.323 is the most widely distributed standard and the supplementary services are specified in H.450. When installing LAN SYSTEM 42 this will normally be the preferred standard in a commercial environment but SIP will increasingly become available in the future.

Skills

When installing a LAN SYSTEM the skills needed are to be found both in the telecom and IT world since they are being integrated. The IT expertise has to be quite advanced since a telephone normally needs to communicate with the external world and this can pose a security threat if firewalls and filters are not configured properly. The LAN SYSTEM technology also has special components that require special abilities to be installed. And when the full potential of LAN SYSTEM is to be utilised, knowledge is needed to integrate databases and unified messaging systems

Components of a LAN SYSTEM 42

Now, what are the main components of a LAN SYSTEM 42 system? In principal in addition to the normal switches and routers required, three parts have to interoperate:

1. Gatekeeper

This component is responsible for resolving the addresses in the LAN SYSTEM 42 network. It can also be used to authenticate communication partners (gateways and clients) or log calls.

2. Client

This can be a LAN SYSTEM 42 phone, a PC client running a soft phone, a terminal adapter (it enables other voice / analogue equipment to be connected) or a mailbox server.

3. Gateway

The gateway is the portal to the external world. It is used to compress voice further (since WAN connections are more costly), provide protection from illegal external access or convert to another technology (e.g. ISDN).

Summary

By integrating voice into their data networks companies can optimise their business. Since a lot of companies administrate their IT infrastructure themselves, they will need to increase their skills to handle the new challenges awaiting them. The traditional service contracts and proprietary solutions of the Telecom, intercom, PA, video worlds will become a thing of the past. IP-based communications and specifically LAN SYSTEM 42 is the new technology of the millennium.

Example of an IP-based Intranet / LAN communication system

